"A SYNOPSIS ON THE TOPIC"

" CYTOGENETICAL STUDIES ON OBNOXIOUS WEEDS AFFECTED BY GENETICALLY MODIFIED MULTICLONAL ANTIBODY ."

[Submitted for the enrolment as a research Scholar for the degree of " Doctor of Philosophy" in Veer Kunwar Singh University Ara. Bihar]

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CONTENTS OF SYNOPSIS- **PAGE NO-**

1. INTRODUCTION 3

2. REVIEW OF LITERATURE 3

3. AIM AND OBJECTIVE OF RESEARCH 5

4. RESEARCH DESIGN AND METHODOLOGY 6

5. BIBLIOGRAPHY/REFERENCES. 7

1. INTRODUCTION-

Weed science now a days is a miracle which revolutionized world agriculture through the concept of chemical weed control ever since the commercial development of 2,4-D in 1947. As herbicides have been increasingly accepted in the recent years by farmers as an efficient, Economical and time saving method of controlling weeds.

In spite of the dominating influence of herbicide on modern weed control technology, the consequences of possible pitfalls and its hazards in excessive dependence on crude chemicals cannot be ruled out. These chemicals, which in being used as herbicide, fungicide, Insecticide, nematicides etc have been recognized to have considerable effect on environment. Ac to WHO recommendation 8 out of 168 known important herbicides used for weed control were classification as highly hazardous to Human beings . Thus, application of weed control practices should be carried, When weeds are more Vulnerable. Habitat Management practices by Selecting amplisuited chemicals derived from the Biological organisms, can be taken into account, capable to influence the seed germination and is biodegradable without residual effect, can be a boon in the direction of weed management.

2. REVIEW OF LITERATURE-

Enthusiastically no doubt , agriculture scientist had accepted the challenges and adopted different techniques in the field of weed control.

Cytochemical changes during the various chemical control has also been taken into account to observe the mitotic behaviors of root tip cells.

- Canvin, D.T. and Friesen, G. (1959). Cytological effect of CDAA and IPC on germinating barley and peas. Weeds,7: 153-156. Reported that propachlor and prynochlor, inhibits seed germination, root elongation of susceptible plant species.
- Solomon, S. and Bhapkaa, D.G. (1960). Trends in weed control methods and sequencial progress in weed control work in Maharastra State- review. Proc. 2nd. Weed Control Seminar, Hissar, No.20-21 (fide weed Abstr. 18, Abstr. No.1214). observed that the 10% solution of 2,4, di-chlorophenol and 2,4, 5-T when applied at the rate of 30 gal/ac gave complete kill of the parthenium hysterophrus, up to some extent.
- Jaichandra (1971). Parthenium Weed in Mysore state and its control. Curr. Sci. 40: 568-569. Observed that Parthenium hysterophorus can be controlled at the flowering state with bromacil, a herbicide by foliar application of 2-4 kg/ha.
- Dutta, M. and Rakshit, S.C. (1986). Cytology and seedling characteristics of Steptomycin treated tossa Jute, Corchorus olitorius L. Proc. 73rd Ind. Sci. Cong. Part III, Abstract :154-155. Reported the effect of streptomicine on seed germination, seedling character and mitotic behavior of root and also reported chromosomal aberration.

- Mishre, K.B. Ajay Kumar (1996) : Effect of streptomycin on the growth of the seedlings of Parthenium hysterophorus.L. and mitotic division in the root. J. Bihar BA.Soc. Vol.5[1 and 2] :114-117. Reported reduced seed germination, seedling growth and mitotic index at 250 PPM concentration of streptomycin as compared to respective control.

- Kumar Ajay, Kumar Arun Singh K. Amit (2011), " cytotoxic and Genotoxic effect of cefixime IIIrd generation multiclonal Antibody on Parthenium hysterophorus .L. root tip cells. Adv. Biol. Res. 29(2) : 7-12. Reported cytotoxic, Genotoxic and clastogenic effect of cefixime and have to be tested at greater extent.

3. AIM AND OBJECTIVE OF RESEARCH -

Success in controlling noxious weeds through the enforcement of weed Laws depends upon the avaibility of effective and cost effective of control Measures. This is very much essential for India where weeds like Cyperus rotundus (Cyperaceae), Parthenium hysterophorus.L. (Asteraceae) are posing economic loss and health hazards. These both noxious weed is a serious problems in non cultivated areas in many of states in India. During recent past Biological chemical like Streptomycin, Ampicillin i.e. 1st generation multiclonal Antibody/Antibiotics has shown satisfactory results in the direction of seed germination, seedling growth, Mitotic index etc. in the direction of Biological control through Biological products or, vis-à-vis, treatments.

So, during present endeavor we have selected IVth generation genetically modified muliclonal antibody derived from the mold Acremonium/ Cephalosporium. Which is genetically modified by biotechnological technique and has been proved much more efficient in action. Efforts in this direction has been taken by the few scientists but in spite of certain limitation of every problem weeds needs effective and economical potential to control selected weeds present in the cropped as well as in non-cropped areas. Scientist have observed effect on germinating seeds and also reported about it cytotoxic and genotoxic potential During present endeavor we have aimed also to acertain bio- assay that is action potential of the selected biochemical.

4. RESEARCH DESIGN AND METHODOLOGY-

a) About the Test Plant.

Pathenium hysterophorus, Cyperus rotundus are the problem weeds responsible for health hazards in human beings and animals too. Posing severe allergy ,Hay fever, contact dermatitis, Bronchial asthma etc.

b) Survey and collection of test seeds-

The seeds of these test plants will be collected with due care by avoiding direct contact.

c) Selection of Fourth generation, multiclonal and Genetically modified Antibody/Antibiotics.

Genetically modified multiclonal antibodies to observed the eficacy because it has been tested randomly on other weeds as well. It has also reported phytotoxic effect at higher dosage.

d) Preparation of different concentration of this antibiotic to observe their effect on percent seedling, root shoot growth-

Different concentration will be prepared in sterilled distilled water and will maintained that 5-10°C for in –vitro treatment. Potential of the solution will be calculated in terms of international units and the solution prepared will be kept in well leveled sterilled, reagent bottles during investigation.

e) Cytological preparation of treated root tip cells and their mitotic index, cytotoxic and genotoxic effects-

Germination seedlings treated with different concentrations will be selected, excised and will be fixed in aceto-ethanol[1:3] at every 24 hrs of treatment with their respective recovery phase, cytotoxic and genotoxic effects found if any.

f) Statistical analysis of data recorded during investigation-

All the data obtained during the course of investigation will be analyzed statistically what ever necessary.

5. BIBLIOGRAPHY/REFERENCES.

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